

VIII. CLAIMS APPENDIX

1. (Canceled)
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39. (Canceled)

40. (Previously presented) A machine readable storage medium comprising a program containing a set of instructions for causing a cell screening system to execute procedures for measuring internalization of cell surface receptor proteins in individual cells on an array of locations which contain multiple cells, wherein the procedures comprise:

a) identifying internalized cell surface receptor proteins in multiple individual cells on the array of locations, wherein the individual cells comprise at least a first luminescent reporter molecule that labels a cell surface receptor protein of interest to produce a labeled cell surface receptor protein, and at least a second luminescent reporter

molecule that reports on cells, wherein the identifying comprises determining whether luminescent signals from the labeled cell surface receptor protein in the individual cells identified by the at least second luminescent reporter molecule meet or surpass a user-defined threshold luminescent intensity, wherein luminescent signals from the labeled cell surface receptor protein that meet or surpass the user-defined threshold luminescent intensity represent an internalized cell surface receptor protein;

- b) calculating a number and/or percent of the individual cells that internalized the labeled cell surface receptor protein wherein the calculations provide a measure of internalization of the cell surface receptor protein in the individual cells; and
- c) displaying data on the measure of internalization of the cell surface receptor protein in the individual cells.

41. (Previously presented) The machine readable storage medium of claim 40, wherein the individual cells are live cells, and wherein steps (a) and (b) are performed at multiple time points.

42. (Previously presented) The machine readable storage medium of claim 40, wherein the procedures further comprise determining one or more of the following:

- i) an aggregate area of the objects that represent the internalized cell surface receptor protein;
- ii) an aggregate intensity of the objects that represent the internalized cell surface receptor protein;
- iii) a normalized aggregate intensity of the objects that represent the internalized cell surface receptor protein;
- iv) a number of objects that represent the internalized cell surface receptor protein; and
- v) an average number per cell of objects that represent the internalized cell surface receptor protein.

43. (Previously presented) The machine readable storage medium of claim 40, wherein the procedures comprise:

- i) obtaining a low resolution image to identify locations in the array of locations that contain internalized cell surface receptor proteins; and
- ii) obtaining a high resolution image of only those locations that contain internalized cell surface receptor proteins as determined in step (i).

44. (Previously presented) The machine readable storage medium of claim 40 wherein the first luminescent reporter molecule comprises a fluorescent protein.

45. (Previously presented) The machine readable storage medium of claim 40 wherein the first luminescent reporter molecule comprises an antibody.

46. (Previously presented) The machine readable storage medium of claim 40 wherein the first luminescent reporter molecule comprises a fluorescent reporter molecule.

47. (Previously presented) The machine readable storage medium of claim 40 wherein the second luminescent reporter molecule comprises a fluorescent reporter molecule.

48. (Previously presented) The machine readable storage medium of claim 40 wherein the cell surface receptor protein is a G-protein coupled receptor.